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Investigation of Relation between Epicardial Fat Thicness and Reperfusion and Prognosis in ST Segment Elevated Myocardial Infarction Patients

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Aıms: Our trial is goal is to investigate the effect of epicardial fat thickness which is calculated with transthoracic echocardiography on reperfusion and prognosis in st segment elevated myocardial infarction patients who underwent primary percutenaous intervention.

Design-METHOD: 144 patients who admitted with st segment elevated myocardial infarction to Ankara Numune Education and Research Hospital, Department of Cardiology Clinic and underwent primary percutenaous intervention afterwards were included in this trial.Epicardial fat thickness was calculated on the parasternal long axis view with the anatomic reference of aortic annulus from right ventricle free wall.Addiotionally these patients were followed about major adverse cardiac events for six months.Anjiographically reperfusion success was evaluated with three different methods which includes TIMI(thrombolysis in myocardial infarction)TIMI frame count(TFC) and myocardial blush grade(MBG).

Results: 41 female and 103 male patients were included in this trial.In the group of TIMI flow 0-1-2 epicardial fat thickness was significantly higher than the TIMI flow 3 group. (0,89 [0,3-1,4] and 0,73 [0,33-1,2] p=<0,001). Also in the group of MBG 0-1 epicardial fat thickness was higher than the MBG 2-3 group patients. (0,87 [0,3-1,4] and 0,72 [0,33-1,2] p=<0,001). And between the two groups six month mortality was higher in patients with bigger epicardial fat thickness values (p=0,01).

Conclusıon: Increase in epicardial fat thickness in patients with STEMI who underwent primary percutenaous intervention was related with failure of reperfusion and increased mortality.

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The Predictive Value of Gensini Score in the Clinical Outcomes in Patients with Acute ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

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Purpose: The aim of this study was to investigate the prognostic value of Gensini score in 3-year clinical outcomes in patients undergoing primary percutaneous coronary intervention (pPCI) for acute ST-elevation myocardial infarction (STEMI).

Methods: The present study prospectively included 114 consecutive patients (mean age 54±10 years, 99 men, 15 women) with first acute STEMI and with thrombolysis in myocardial infarction(TIMI) 0/1 flow pre-procedurally who underwent successful (TIMI-3 flow) pPCI. Gensini score was calculated as an index of the severity of coronary atherosclerosis, based on the results of coronary angiography. Patients were divided into two groups according to the fourth quartile of Gensini score (Group I <75; Group II ≥75). We assessed the composite and separate occurence of the major adverse cardiac events (MACE), including cardiac death, nonfatal myocardial infarction, target-vessel revascularisation and admission for heart failure. The follow-up time was 3 years.

Results: Troughout the 3-year follow-up, target-vessel revascularisation and MACE were significantly higher in group II patients compared to group I patients (46.4% vs 18.4%, p=0.006, 62% vs 31.7, p=0.007; respectively). However, there was no significant difference between patients in group I and II, in terms of admission for heart failure (4.5% vs 15.4 %, p=0.14) nonfatal myocardial infarction (16.2% vs 35.7%, p=0.09) and cardiac death (4.7% vs 10.7%, p=0.36). The multivariate logistic regression analysis demonstrated that Gensini score indepently predicted target-vessel revascularisation and MACE (OR: 3.87, 95%CI: 1.27-11.83, p=0.017 and OR: 4.28, 95%CI: 1.42-12.94, p=0.01; respectively). In addition, diabetes mellitus was also found to be a strong predictor of MACE (OR: 5.27, 95%CI: 1.57-17.66, p=0.007).

Conclusıon: Gensini score along with diabetes mellitus could predict worse clinical outcome in mid-term follow-up of patients with STEMI.

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Assessment of Heart Rate Recovery Index in Patients with Coronary Slow Flow Phenomenon

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Introductıon: Heart rate recovery after exercise is a function of vagal reactivation, and its impairment is an independent prognostic indicator for cardiovascular and all-cause mortality. The aim of our study was to evaluate heart rate recovery in patients with coronary slow flow phenomenon (CSFP).

Methods: The study population included 43 patients with CSFP (29 men; mean age, 50.0±10.5 years) and 30 control subjects (18 men; mean age, 53.7±11.3 years) with normal coronary arteries on angiography. Basal electrocardiography, echocardiography, and treadmill exercise testing were performed in all patients and control participants. Coronary flow was quantified using the corrected TIMI frame count (TFC) method. The heart rate recovery index was defined as the reduction in the heart rate from the rate at peak exercise to the rate 1st-minute (HRR1), 2nd-minute (HRR2), 3rd-minute (HRR3) and 5th-minute (HRR5) after the cessation of exercise stress testing.

Results: There are significant differences in HRR1 and HRR2 indices between patients with CSFP and control group (28.8±6.4 versus 34.2±7.1; p=0.001 and 48.5±11.5 versus 53.9±10.5; p=0.04, respectively). The TFCs for all the epicardial coronary arteries and the mean TFC were significantly higher in the CSFP group (p<0.01). There were also remarkably negative correlations between the mean TFC and HRR1 (r=-0.27, p=0.02), and HRR2 (r=-0.24, p=0.04).

Conclusıons: The heart rate recovery index impaired in patients with CSFP compared to control subjects. When the prognostic significance of the heart rate recovery index is considered, a useful, simple, and noninvasive test may be clinically helpful in the recognition of high-risk patients with CSFP.

Table. Demographic and clinical futures of the patients and the controls

	CSFP (mean ± SD)	Control (mean ± SD)	*P* value
Number of subjects	43	30	
Age, years	50.0±10.5	53.7±11.3	0.15
Male/female	29±14	18±12	0.62
BMI, kg/m^2	26.5±3.1	26.9±2.4	0.58
Heart rate, beats/min	91.4±19.1	87.9±12.2	0.38
Smoking	14(33%)	4(15%)	**0.03**
Systolic BP, mmHg	125.7±22.3	121.9±15.4	0.41
Diastolic BP, mmHg	77.3±12.1	73.2±11.6	0.15
TIMI frame count (TFC)			
Left anterior descending artery (LAD)	43.6±13.4	28.3±6.0	**<0.001**
Corrected TFC of LAD	25.6±7.9	17.2±3.7	**<0.001**
Left circumflex artery	26.5±6.5	18.4±4.5	**<0.001**
Right coronary artery	24.0±9.3	17.1±3.7	**<0.001**
Mean TFC	25.4±6.1	17.6±2.7	**<0.001**
Exercise Stress Test Findings			
Exercise time, min	9.3±2.9	9.6±2.4	0.63
Maximal heart rate, beats/min	170.8±19.3	169.7±12.2	0.78
Maximal systolic BP, mmHg	164.5±22.5	163.6±23.4	0.87
Maximal diastolic BP, mmHg	78.8±13.7	75.2±15.0	0.29
Maximal METs	11.5±2.8	11.7±2.5	0.83
HRR_1	28.8±6.4	34.2±7.1	**0.001**
HRR_2	48.5±11.5	53.9±10.5	**0.04**
HRR_3	57.3±13.9	62.6±11.0	0.08
HRR_5	65.4±14.8	70.3±12.2	0.14

*Data are presented as mean ± standard derivation.
CSFP = Coronary Slow Flow Phenomenon; BMI = body mass index; BP = blood pressure; HDL = high-density lipoprotein; LDL = low-density lipoprotein, TFC = TIMI frame count, LAD = Left anterior descending artery. HRR = Heart rate recovery index.